



1. A method of monitoring polymer array synthesis on a solid substrate comprising:

- (i) providing a preselected array of labeled polymers connected to cleavable linkers on a solid substrate;
- (ii) cleaving the array of labeled polymers from the solid substrate by cleaving the cleavable linkers, thereby creating labeled unbound polymers; and,
- (iii) detecting the labeled unbound polymers.

2. The method of claim 1, wherein each of the labeled polymers comprises a single isomer.

3. The method of claim 1, wherein the labeled unbound polymers are heterogeneous by size, and wherein the method further comprises separating the labeled unbound polymers by size.

4. The method of claim 1, wherein the labeled unbound polymers are heterogeneous by size, and wherein the method further comprises separating the labeled unbound polymers by charge using ion exchange chromatography.

5. The method of claim 1, wherein the labeled unbound polymers are heterogeneous by size, and wherein the method further comprises separating the labeled unbound polymers by size using capillary gel electrophoresis.

6. The method of claim 4, wherein the ion exchange chromatography is performed by HPLC.

7. The method of claim 4, wherein the ion exchange chromatography is performed by HPLC, and wherein the labeled unbound polymers are detected as they exit an ion exchange column.

8. The method of claim 1, wherein the polymer is an oligonucleotide.

9. The method of claim 1, wherein the preselected array of polymers is provided by synthesizing polymers in an array.

10. A method for measuring the effect of altering a polymer array synthesis protocol, comprising:

(i) providing an array of polymers synthesized on a solid support by a first synthesis protocol, thereby creating a reference array of polymers;

(ii) providing an array of polymers on a solid support synthesized by a second synthesis protocol, wherein the second synthesis protocol is different than the first synthesis protocol, thereby creating a test array of polymers;

(iii) cleaving separately the reference array of polymers and the test array of polymers, thereby creating cleaved reference polymers and cleaved test polymers;

(iv) detecting the cleaved test polymers and the cleaved reference polymers; and,

(v) comparing the cleaved test polymers to the cleaved reference polymers.

11. The method of claim 10, wherein the test and reference polymers are oligonucleotides.

12. The method of claim 10, wherein the first synthesis protocol differs from the second synthesis protocol by a single variation.

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13. The method of claim 10, wherein the reference polymers and the test polymers are attached to the solid substrate by a cleavable linker.

14. The method of claim 10, wherein the test and reference polymers comprise a detectable label.

15. The method of claim 14, wherein the label is a single isomer.

37. The method of claim 1, wherein the labeled polymers comprise a label comprising a fluorescent moiety.

38. The method of claim 14, wherein the detectable label comprises a fluorescent moiety.

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